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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements relating to Double Glazing Units

I, BERNARD PAUL MANFRED SCHWARTZ, a British Subject of 52, Rochester Row, London, S.W.1, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to double glazing units, for example of the kind described in my Patent No. 937,989, in which two panes are held spaced apart in resilient sealing means.

In all such double glazing units the construction is intended to seal the interspace between the panes in an air- or gas-tight manner but in practice leakage may occur and change in pressure of the atmosphere relative to the pressure in the interspace may sooner or later cause moist air to be drawn in with the result that condensation will occur which makes the double glazing unit unsatisfactory.

In my Patent No. 937,989 it is therefore proposed to provide one or more apertures in the sealing means which are normally plugged but which may be opened so that the interspace may be flushed with a dry gas.

It has now been found that the formation and sealing of such apertures in a rubber-like or plastic sealing member occasions certain difficulties and in accordance with the present invention such difficulties are overcome by providing such sealable apertures in one or both of the panes themselves.

According to the invention, the improved sealable aperture comprises an apertured bush which is secured in an aperture through the pane, and means including a stopper like member and a co-operating sealing ring for releasably sealing the aperture in the bush. Conveniently the bush may comprise a head having a shank extending therefrom and which is of a length equal to or somewhat less than the thickness of the pane. Such a bush may be secured in the aperture in the pane with its shoulder abutting the pane by the use of any known or suitable substance such as may

be used for sealing metal to glass. Alternatively the bush may be secured in position by forming the shank so that it extends through the pane and screwing a nut on to the projecting end which is formed with an appropriate thread.

In a further alternative the bush may comprise two portions each comprising a head and a shank which may be screwed one into the other so that the shoulders formed by the heads lie adjacent opposite faces of the pane.

The stopper like member may be formed in any convenient manner. In one form the stopper like member is formed as a threaded bolt or stud and the aperture is sealed by forming it with a thread and screwing the bolt or stud therein, the sealing ring being preferably arranged between the head of the bolt or stud and the adjacent face of the pane or the end of the bush as the case may be. In an alternative form the stopper like member is formed as a plunger and the aperture is sealed by locating the sealing ring within the aperture and passing the plunger into the aperture and through the sealing ring by which it is gripped.

The improved sealing means of this invention will now be described by way of example with reference to the accompanying drawing, in which:—

Figure 1 is a sectional elevation showing one form of the improved sealing means,

Figures 2 and 3 are end views of a bush and stud respectively of the sealing means of Figure 1, and

Figure 4 is a sectional elevation of an alternative form of sealing means.

Referring to Figures 1, 2 and 3, the sealing means is fitted to a pane 1 of a double glazing unit by drilling the pane and countersinking one end of the hole, preferably to form a surface 2 of part-spherical contour. The shank of a bush 3 having an enlarged head is secured in the hole in pane 1 conveniently by means of adhesive 4, the shoulder between the shank

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and head being conveniently formed with a plurality of depressions or recesses 5 within which to receive the adhesive. With the bush secured in this manner the aperture through the bush is sealed by means of a stopper like member which in this embodiment comprises a threaded stud 6 which is screwed into the bush, an intervening O-ring 7 of suitable material ensuring an air-tight seal. As shown, the head of the stud 6 is formed with holes 8 so that the stud may be unscrewed only by means of a special tool.

Figure 4 shows an alternative form of bush which comprises two portions 10 and 11 each having a threaded shank 12, 13 which can be screwed one into the other. The shoulders 14, 15 of the portions lie over the faces of the pane 16, preferably with clearance to allow for variations in thickness of the pane and the intervening space is preferably filled by a U-shaped rubber grommet 17 which is fitted into the hole in the pane before assembly of the bush. The two portions are so shaped that when screwed together they define a recess 18 in which is located a sealing member 19 such as an O-ring. With the above described bush secured in the aperture in the pane, the aperture through the bush may be simply sealed or opened by means of the stopper-like member 20 which is formed as a plunger and which, when pressed home into the position shown, is securely held by the O-ring but may be quickly removed by inserting a suitable tool under the raised rim of the flange 21.

The sealable apertures so formed in the pane or panes may be located in inconspicuous positions, for example at opposite corners of a pane, and readily enable the interspace to be flushed out and dried without removing the double glazing unit from its installed position.

A further advantage of the construction of this invention is that it readily enables the alarm system described in Specification No. 797,426 to be fitted since, apart from filling the interspace with a suitable gas, all that is required is to adapt the stopper like member so that it can support the combustible filament in the interspace and provides the necessary electrical connections thereto.

WHAT I CLAIM IS:—

1. A double glazing unit wherein in order to enable the interspace to be flushed with dry gas or air there is provided in one of the panes of the unit at least one sealable aperture comprising an apertured bush which is secured in an aperture through the pane, and means including a stopper like member and a co-operating sealing ring for releasably sealing the aperture in the bush.

2. A double glazing unit as claimed in claim 1, wherein the bush is secured in the aperture by means of adhesive.

3. A double glazing unit as claimed in claim 1, wherein the bush is formed with a head and with a shank which is threaded externally and is secured in position on the pane by a nut screwed on the shank projecting there-through.

4. A double glazing unit as claimed in claim 1, wherein the bush comprises two portions each having a head and a threaded shank which can be screwed one into the other.

5. A double glazing unit as claimed in any of claims 1 to 4, wherein the stopper like member is formed as a threaded bolt or stud and the aperture in the bush is sealed by forming the aperture with a thread and screwing the bolt or stud therein.

6. A double glazing unit as claimed in claim 5, wherein the sealing ring is arranged between the head of the stud or bolt and the adjacent end of the bush or face of the pane.

7. A double glazing unit as claimed in any of claims 1 to 4, wherein the stopper like member is formed as a plunger and the aperture in the bush is sealed by locating the sealing ring within the aperture and passing the plunger into the aperture and through the sealing ring by which it is gripped.

8. A double glazing unit having a sealable aperture substantially as herein described with reference to any of the figures of the accompanying drawing.

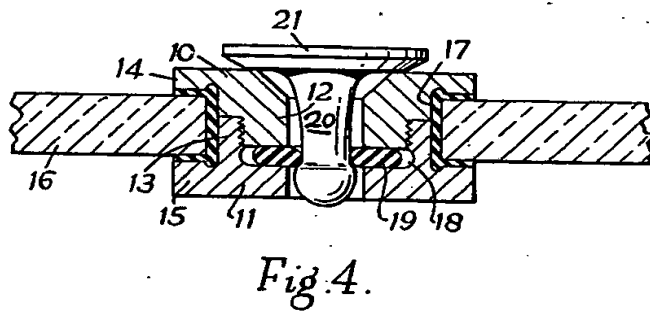
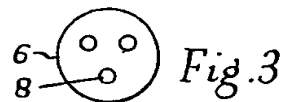
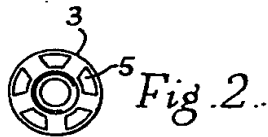
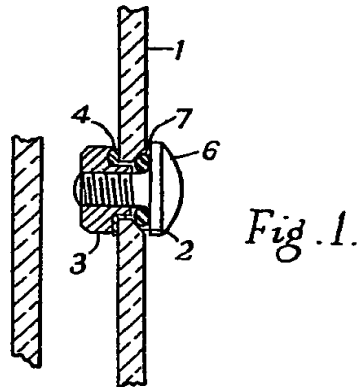
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1 SHEET

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